UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,481	05/29/2001	Tetsuya Minakami	166225/2000	3496

30743 7590 07/14/2004

WHITHAM, CURTIS & CHRISTOFFERSON, P.C.
11491 SUNSET HILLS ROAD
SUITE 340
RESTON, VA 20190

EXAMINER	
YE, LIN	

ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 07/14/2004 5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/865,481	MINAKAMI, TETSUYA	
	Examiner	Art Unit	
	Lin Ye	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 May 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-9 and 11-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. U.S. Patent 6,639,626 in view of Applicant's Prior Art.

Referring to claim 1, the Kubo reference discloses in Figure 10, a digital still camera comprising a main solid image element (first image sensor CCD 58), and a sub solid image element (second image sensor CCD 63) as a solid image element which has pixels fewer than that of said main solid image element and can operate at a higher frame rate than said main solid image element (See Col. 12, lines 63-67 and Col. 13, lines 1-7). However, the Kubo reference does not explicitly states the first image sensor CCD 58 is a full frame type CCD.

The Applicant's Prior Art discloses in Figures 1-3, a full frame type solid image element (FF-CCD) is used in the digital camera having a high resolution (large number of pixels). Figure 3 and page 3, lines 12-24, shows the FF-CCD can integrate the pixels as many as possible to the limited chip size and have an aperture ratio higher than that of the conventionally used IT-CCD. This sets forth the motivation to use the FF-CCD instead of conventional IT-CCD in the digital camera art. For that

reason, it would have been obvious the first image sensor CCD 58 which has large number of pixel is a full frame type solid image element disclosed by Kubo.

Referring to claim 2, the Kubo reference discloses comprising a digital image signal process circuit (80, See Col. 13, lines 32-35) in which an image signal inputted to said sub solid image element and said main solid image element is color signal processed to provide a color moving image (frame images) and data of said color moving image are used to perform auto focus process (see Col. 14, lines 45-47), simplified image display (preview image on display panel 66, see Col. 44, lines 9-11) process, photometry control (detected light quantity for exposure control data, see Col. 14, lines 30-34) process, and white balance process (color balance process, see Col. 13, lines 59-64).

Referring to claim 3, the Kubo reference discloses a simplified image display portion for displaying said color moving image subjected to simplified image display process by said digital image signal process circuit in order to preview display an image to be photographed before photographing (See Col. 14, lines 9-14).

Referring to claim 4, the Kubo reference discloses a simplified image display portion in which the preview display before photographing is terminated before the photographing is started by said main solid image element (first image sensor 58) so as not to display said color moving image (preview image are held, see Col. 15, lines 17-40), and after completion of the photographing by said main solid image element, the photographed image photographed by said main solid element (58) is displayed (See Col. 17, lines 36-44).

Referring to claim 5, the Kubo reference discloses wherein the photographed image photographed by said main solid image element is an image compress-processed (image data compression 85 as shown in Figure 10) after photographing.

Referring to claim 6, the Kubo reference discloses wherein a digital image signal process circuit (80) which calculates a signal process coefficient in the white balance process (CPU 70 calculates values of R/G and B/G are used as correction gains for the R and B components, see Col. 13, lines 58-65), and uses said signal process coefficient for processing the photographed image obtained by photographing by means of said main solid image element (first image sensor 58) when the switch (90) connected with main solid image element.

Referring to claim 7, the Kubo reference discloses wherein a digital image signal process circuit (80) which determines photometry data (exposure control data) including an aperture value and shutter speed in the photometry control process before photographing by said main solid image element (58), and performs photometry control based on said photometry data when the switch (90) connected with main solid image element (See Col. 14, lines 29-38).

Referring to claim 8, the Applicant's Prior Art discloses comprising a digital image signal process circuit which determines an amount of strobe (541) light at strobe photographing by the dimmer process (dimmer sensor 518) function before photographing by said main solid image element (505, See page 6, lines 15-23).

Referring to claim 9, the Applicant's Prior Art discloses comprising a dimmer sensor (518) for measuring said amount of strobe light (See page 6, lines 17-19).

Referring to claim 11, the Kubo reference discloses an optical path change mechanism (mirrors M5 and prism 61, See Col. 12, lines 48-52) which changes or distributes the optical path of a light from a subject, and irradiates the light from the subject onto at least one of said main solid image element (58) and said sub solid image element (63) as shown in Figure 10.

Referring to claim 12, the Kubo reference discloses an optical path change mechanism in which when the optical path of a light from a subject is changed or distributed and the light from the subject is irradiated onto any one of said main solid image element and said sub solid image element, the light from said subject is shielded on the other as shown in 9A (the main solid image element 58 is shielded) and 9C (the sub image element 63 is shielded).

Referring to claim 13, the Kubo reference discloses comprising said main solid image element and said sub solid image element in which when one of them is operated, the other is not operated as shown in Figure 9A-C.

Referring to claim 14, the Kubo reference discloses comprising a light control logic circuit (diaphragm driver circuit 71 and shutter 57) for controlling said optical mechanism, a main image analog process circuit (CDS 581 and AGC 582) and a sub image analog process circuit (CDS 631 and AGC 632) for receiving and processing the respective output signals of said main solid image element (58) and said sub solid image element (63), an analog process control logic circuit (camera control CPU 70) for controlling said main image analog process circuit and said sub image analog process circuit, and a digital image signal process circuit (80) for receiving and color processing the digital output signal from said main image analog process circuit and

said sub image analog process circuit, said light control logic circuit and said digital image signal process circuit being interconnected as shown in Figure 10.

Referring to claim 15, the Kubo reference discloses in addition to said light control logic circuit, said main image analog process circuit, said sub image analog process circuit, said analog process control logic circuit, and said digital image signal process circuit, a sub CPU (70) for controlling said light control logic circuit and said analog process control logic circuit through a sub digital bus (while the switch 90 connected A/D 633), and a main CPU (70) for controlling said digital image signal process circuit through a main digital bus (while the switch 90 connected A/D 583).

Referring to claim 16, the Kubo reference discloses wherein said light control logic circuit (CPU 70) and said digital image signal process circuit (80) are interconnected by a two-way digital bus (bi-directional bus as shown the bold black bus line in Figure 10) provided therebetween.

Referring to claim 17, the Kubo reference discloses light control logic circuit (CPU 70) and said digital image signal process circuit (80) are interconnected via said main digital bus as shown in Figure 10.

Referring to claim 18, the Kubo reference discloses wherein any one of said main image analog process circuit (CDS 581 and AGC 582) and said sub image analog process circuit (CDS 631 and AGC 632) includes a switch and an analog-digital converting circuit, said switch (90) selects any one of the output signals from said main solid image element and said sub solid image element, and thereafter, the output signal selected is converted by said analog-digital converting circuit as shown in Figure 10 (See Col. 13, lines 37-45).

Referring to claims 19-20, the Kubo reference discloses the sub solid image element (63) is a CCD solid image element, but does not explicitly states what type of CCD (full frame or interline type CCD). The Applicant's Prior Art discloses the interline type CCD (IT-CCD) is well know in the art for permitting moving image preview display on LCD in the digital camera art (See page 2, lines 4-15); and the full frame CCD (FF-CCD) having large number pixel that can not operated in high speed. For this reason, it would have been obvious the sub image sensor CCD 63 is an interline type solid image element disclosed by Kubo.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. U.S. Patent 6,639,626 in view of Applicant's Prior Art and Parulski et al. U.S. Patent 5,828,406.

Referring to claim 10, the Kubo reference and Applicant's Prior Art disclose all subject matter as discussed with respected to same comment as with claims 1 and 8, except that they do not explicitly show the amount of strobe light is measured through said sub solid image element instead of a dimmer sensor.

The Parulski reference discloses in Figure 2, a digital camera can operated either one of a motion preview mode and a higher quality still mode. The processor (36) determines amount of strobe light base on the last preview images output from the solid image sensor, decides whether to fire the flash. The Parulski reference is evidence the one of ordinary skill in the art at the time to see more advantage for the digital camera system be able to measure amount of strobe light through the solid image sensor so that the system can decide whether fire the flash for the optimum

exposure without using additional element such as a dimmer sensor. For that reason, it would have been obvious to see the amount of strobe light is measured through said sub solid image element instead of a dimmer sensor disclosed by Kubo.

4. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. U.S. Patent 6,639,626 in view of Applicant's Prior Art and Fossum et al. U.S. Patent 5,949,483.

Referring to claim 10, the Kubo reference and Applicant's Prior Art disclose all subject matter as discussed with respected to same comment as with claims 1 and 19, except that they do not explicitly show the sub solid image element is a CMOS type solid image element.

The Fossum reference discloses in Figures 1-7, the solid image element is CMOS sensor. The Fossum reference is evidence the one of ordinary skill in the art at the time to see more advantage for the digital camera having more flexible option to using CMOS sensor and not just limited in CCD sensor so that CMOS sensor can more easily integrate on-chip signal processing and consume less power than CCD type image sensor (See Col. 1, lines 40-58). For that reason, it would have been obvious to see the sub solid image element is a CMOS type solid image element disclosed by Kubo.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Lin Ye** whose telephone number is **(703) 305-3250**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R Garber can be reached on (703) 305-4929.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Lin Ye
July 7, 2004